Florida Department of Transportation

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ANANTH PRASAD, P.E.
SECRETARY

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	IB Docket No. 12-340
LightSquared Subsidiary LLC	)	
Request to Modify its ATC Authorization	)	

Comments

I. INTRODUCTION

1. The Florida Department of Transportation (FDOT) expresses its opposition to the request filed by LightSquared Subsidiary LLC ("LightSquared"). The FDOT is a user of the frequencies adjacent to the band (1675-1680 MHz) that LightSquared is petitioning the FCC to allocate for terrestrial mobile use. The FDOT is currently constructing two satellite earth stations that will be used to receive the space-to-ground downlink from the National Oceanic and Atmospheric Administration (NOAA) Geostationary Operational Environmental Satellite (GOES) system and will likely install more such earth stations.

II. BACKGROUND

1. The FDOT satellite earth stations will utilize the Data Collection System (DCS), an application onboard GOES satellites, to receive wind speed data, in real-time from anemometers installed on highway bridges, and provide that data to the public safety community to help them decide when to close and reopen bridges and highways during severe weather events. The current domestic DCS downlink on GOES is at 1694.5 MHz with plans to move the application down to 1679.9 MHz on the GOES-R spacecraft when launched. The earth stations are necessary to ensure that the data can be received without the use of the internet or other commercial telecommunications services that may be compromised during a severe weather event such as a hurricane. Construction of the two earth stations is scheduled for completion by June 2013.

2. This FDOT project is the first of its kind and has so far proved successful during the 2012 hurricane season, using wind speed data retrieved through a temporary, and less desirable method, involving the internet. Other states have expressed an interest in this project and there is potential for additional earth station installations on a national level.

III. DISCUSSION

1. The operation of a space to ground earth station that receives transmissions from the GOES system in a highly reliable and highly available operational profile requires the installation of a large and expensive satellite dish antenna system that is capable of receiving satellite signals from NOAA's geo-stationary satellites. The equipment is highly sensitive and specifically designed to operate in this weak-signal, receive-only environment. There has been no precedence for operating relatively high-power terrestrial transmitters in the spectrum associated with or adjacent to these satellite earth stations and so there is concern that, as with GPS receiver manufacturers, the manufacturers of the earth station equipment have not specifically designed their equipment under the premise that there would be potentially high-power terrestrial interference sources in proximate operation. The FDOT is further concerned that the operation of terrestrial user device systems in proximity to earth stations will cause sufficient on-frequency noise to disrupt reliable satellite signal reception in public safety and federal emergency scenarios.

2. In their application LightSquared defends their request by citing reports and letters that indicate that the federal government is in favor of identifying new spectrum for wireless broadband services. However, LightSquared failed to note that the National Telecommunications and Information Administration (NTIA) has indicated that the spectrum that LightSquared wants to use (1675-1680 MHz) is not appropriate for wireless broadband services. In 2010 the NTIA, working in concert with the Department of Defense, the Department of the Interior, and the National Aeronautics and Space Administration (NASA), published an assessment of the viability of the spectrum from 1675-1695 MHz for use in broadband wireless services, and found that the impact and cost to reallocate any portion of that spectrum for broadband services would be too high[1].

3. Despite the NTIA's position on not reallocating the 1675-1680 MHz band, if the Federal Communications Commission (FCC) reallocates it for LightSquared terrestrial mobile service, the FDOT recommends that it only be reallocated for fixed transmitters to minimize the likelihood of interference caused by proximate operation of a terrestrial mobile device near an earth station. The FDOT further recommends that a new interference protection policy be initiated that will provide a means whereby previously undocumented earth stations are afforded protection from interference caused by terrestrial mobile base station transmissions associated with the services implemented under the reallocation. Such a policy gives terrestrial mobile service providers in the band secondary status relative to existing earth station receiving sites.

4. A systemic deficiency within the FCC rules that is, in part, responsible for the 800 MHz rebanding problem and the recent GPS-LightSquared unsuccessful application is that the FCC does not currently license, regulate, or document receivers that communicate with FCC licensed transmitters. If the FCC elects to reallocate 1675-1680 MHz for terrestrial mobile use, then to protect receiving earth stations, the FCC should establish a receiver interference protection policy for this spectrum and includes the following features:

[1] "An Assessment of the Near Term Viability of Accommodating Wireless Broadband Systems in the 1675-1710 MHz, 1755-1780 MHz, 3500-3650 MHz, and 4200-4220 MHz, 4380-4400 MHz Bands", United States Department of Commerce, October 2010, Page 1-5.

- Secondary status for terrestrial fixed transmitters.
- No operation of mobile or portable, i.e., non-fixed transmitters in the 1675-1680 MHz band.
- Establishes safe-harbor criteria that would prevent a terrestrial mobile service provider from interfering with any existing or previously planned earth station[2].
- A volunteer database that documents earth stations used to communicate with the GOES satellite.
- Require terrestrial fixed transmitter locations to be documented in a public database. A public database permits easy identification of potential new earth station sites.

5. One option would be to operate the database as an extension of the Universal Licensing System (ULS) so that it becomes an extension of the overall FCC database of communication licenses. Such a paradigm shift in how the FCC manages receiver sites could likely be extended to other services that might benefit from its use. To minimize government costs, the funding to establish and operate this volunteer database should be provided by the terrestrial mobile service providers who stand to profit from using the band.

Respectfully,

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[2] Appendix 28 of the International Telecommunication Union Radio Regulations is an example of typical earth station protection criteria and could be revised by the FCC, as appropriate, for this application.